

**WHAT IS CLAIMED IS:**

1. A method for managing a session key used for enabling communications between a mobile terminal and an access point in a wireless local area network

5 ("WLAN"), comprising the steps of:

receiving a request for access to the WLAN from the mobile terminal;  
determining a virtual operator associated with the access request;  
establishing a first secure channel between the access point and the virtual

operator;

10 requesting user authentication from the virtual operator via the first secure channel, wherein the virtual operator communicates with the mobile terminal via a second secure channel to authenticate the mobile terminal;

selecting a session key and sending the session key to the virtual operator via the first secure channel, wherein the virtual operator sends the session key to the  
15 mobile terminal via the second secure channel; and

communicating with the mobile terminal using the session key.

2. The method according to claim 1, wherein the step of requesting user authentication is performed in parallel with the step of selecting and sending the  
20 session key.

3. The method according to claim 2, wherein the communicating step comprises communicating with the mobile terminal using the session key upon receiving notification of successful user authentication from the virtual operator.  
25

3. The method according to claim 2, wherein the step of selecting a session key comprises placing the session key on hold until notification of successful user authentication from the virtual operator, and upon notification removing the session key from on hold and sending the session key to the virtual operator.  
30

4. The method according to claim 3, further comprising the step of removing the session key from on hold if the authentication is successful.

5. The method according to claim 1, wherein the step of selecting a session key

and sending the session key to the virtual operator via the first secure channel is performed only after receiving notification of successful user authentication from the virtual operator.

5 6. The method according to claim 1, wherein the virtual operator includes one of an Internet Service Provider, a cellular provider and a credit card provider.

7. An apparatus for managing a session key used for enabling communications between a mobile terminal and a wireless local area network ("WLAN"), comprising:  
10 means for receiving a request for access to the WLAN from the mobile terminal;  
means for determining a virtual operator associated with the access request;  
first means for communicating with the virtual operator via a first secure channel, the first communicating means requesting user authentication from the  
15 virtual operator via the first secure channel, wherein the virtual operator communicates with the mobile terminal via a second secure channel to authenticate the mobile terminal;  
means, coupled to the first communicating means, for selecting a session key and sending the session key to the virtual operator via the first secure channel,  
20 wherein the virtual operator sends the session key to the mobile terminal via the second secure channel; and  
second means for communicating with the mobile terminal using the session key.

25 8. The apparatus according to claim 7, wherein the first communicating means requests user authentication in parallel with selecting means selecting and sending the session key.

9. The method according to claim 8, wherein the second communicating means  
30 communicates with the mobile terminal using the session key upon receiving notification of successful user authentication from the virtual operator.

10. The method according to claim 9, wherein the selecting means places the session key on hold until notification of successful user authentication from the virtual

10

operator, and upon notification removes the session key from on hold and sends the session key to the virtual operator.

11. The method according to claim 10, wherein the selecting means removes the session key from on hold if the authentication is successful.

12. The method according to claim 7, wherein the selecting means selects a session key and sends the session key to the virtual operator via the first secure channel only after receiving notification of successful user authentication from the virtual operator.

13. The method according to claim 7, wherein the virtual operator includes one of an Internet Service Provider, a cellular provider and a credit card provider.

14. A method for controlling a mobile terminal in a wireless local area network (WLAN), comprising the steps of:

transmitting a request for access to the WLAN, the request including data identifying an associated virtual operator;

establishing a secure channel with the virtual operator for performing user authentication associated with the request for access;

receiving a session key via the secure channel upon successful user authentication wherein the virtual operator receives the session key from the WLAN through a second secure channel; and

establishing communications with the WLAN using the session key.